

<u>Project/Task</u>	<u>Timeline</u>	<u>Staff Leads</u>
Trainings		
RTK/Leveling Training	Every 2 Years (Rotate Among Staff)	SC, FM
Digital Leveling Training	Every 3 Years (Corbin)	SC, FM
Opus Projects Training	Every 3 Years (Corbin or Webinar)	SC, FM
Pix 4D Training	Every 4 Years (Online or CanonEast)	SC, FM
Infrastructure Installation/Maintenance		
Biomonitoring	Completed in 2007 (SH), Completed in 2013 (Goodwin), Completed in 2017 (Catlett), Additional Transect Needed at TC	SC, FM
Eelgrass (Goodwin)	Completed in 2000?	RC, ES
Pine Tree Recruitment	Goodwin Islands - 2011 to 2016 (Complete)	RM, SC, FM
Surface Elevation		
Marsh Original SET Stations	All Sites (Complete as of 2009).	SC, FM, RM
Marsh R-SET Stations	GI (Complete as of 2016), CI (Complete as of 2017), TC (Expect 2 to 4 Additional SETS in 2018), SH (Expect 1 -2 Additional SETS in 2018).	SC, FM, RM, NOAA Intern
Marsh Accretion Plots	GI (Complete as of 2016), CI (Complete as of 2017), TC (New Plots with 2 to 4 Additional SETS in 2018), SH (New Plots with 1 -2 Additional SETS in 2018).	SC, FM, RM, NOAA Intern
Marsh Accretion Plots (re-application)	Ongoing (as needed on Site by Site Basis).	SC, FM, RM, NOAA Intern
Vertical Reference System		
Install Cement Benchmarks	Completed in 2009 (All Sites). Exception might be one additional cement mark at TC (for survey purposes) in 2018.	SC, FM, HB
Install Upland Benchmarks	Completed in 2017 (All Sites). Exception might be one additional cement mark at TC (for survey purposes) in 2018.	SC, FM, RM, HB
Water Quality/Water Level		
SWMP Station Installation	1995 (TC), 1997 (GI), 1999 (SH)	RM
SWMP Station Site Change	2009 (TC), 2010 (GI), 2016 (SH)	RM, FM, HB, SC
SWMP Station Maintenance	Every 2 Weeks	HB, EM
Tide Gauge Station Installation	2011 (SH), 2017 (CI), 2017 (TC)	SC, FM, RM, EM
Tide Gauge Station Maintenance	Monthly	SC, FM, EM
MET Station Installation	1997 (TC), 1998 (SH), 2006 (GI - now removed).	FM
MET Station Maintenance	Every 2 Weeks	EM, FM, SC
Elective Parameters		
Groundwater Well Transect Establishment	2008 (GI), 2008 (TC), 2008 (SH), 2017 (CI).	SC, FM, RM
Groundwater Well Replacement	Need to replace wells as become unstable, filled with sediment. Replaced all wells at GI (2014), TC (2014) and plan to replace all wells at Sweet Hall (2018).	SC, FM
Pine Tree Study Establishment	2011 (Goodwin Islands) - 2 Transects	RM, FM, SC

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Data Collection		
Vegetation Monitoring	July-September, every 2 Years. Next in 2019	SC, FM
SAV Monitoring	Annually (monthly)	RC, ES, HB
Pine Tree Study Monitoring	Complete (as of 2016)	RM, FM, SC
Surface Elevation Change Monitoring	Annually (September to October). Next in 2018.	SC, FM
Cryogenic Coring of Marker Horizons	Annually (September to October). Next in 2018.	SC, FM
SWMP Water Quality Measurements	Every 15 Minutes. Continuous.	WQ, EM
Sediment Core Collection at each SET.	2016 (start at Goodwin Islands). As Time/Funds allow.	FM, RM, SC
Cesium Core Collection near each SET.	2016 (start at Goodwin Islands). As Time/Funds allow.	FM, RM, SC
Tide Gauge Station Measurements	Every 1 Minute. Continuous.	FM, SC, EM
SWMP MET Station Measurements	Every 15 Minutes. Continuous.	SC, EM
Groundwater Monitoring	Seasonal Monitoring Rotating Among Reserve Components. Data for GI, TC, and SH from 2010 to 2016. Will Start New Rotation in Spring of 2018.	SC, FM, HB
GPS Occupation of Control Marks	Historically opportunistic. New Strategy of at least one 6 to 8 Hour Occupation on primary marks each year.	SC, FM, HB
Leveling Between Control Marks.	Historically Opportunistic Leveling among Control Marks. Moving Forward - Attempt to Level between Control Marks (at each site) every 3 to 5 Years.	SC, FM, HB
Leveling to SETS	Strategy to Level between Primary Control Mark and SETs along Transect every 3 to 5 Years. Last done for GI (2012), CI (2017), TC (2014), and SH (2012). Will Attempt to Level in SETs along all Transects in 2018.	SC, FM, HB
Leveling to Groundwater Wells	Strategy to Level between Primary Control Mark and SETs along Transect every 3 years. Last done for GI (2016), CI (2017/2018), TC (2014), and SH (2015). Plan to Survey to Wells at TC and SH (after replacement) in 2018. Survey to Wells at GI in 2019. Survey to Wells in CI in 2020.	SC, FM, HB
Leveling to Vegetation Plots	Strategy to Level/RTK to Vegetation Plots along each transect every 3 to 5 Years. Last done for GI (2014), TC (2014), SH (2011), and CI (2017). Will Plan on Leveling to Plots at GI, TC, and SH in 2018.	SC, FM, HB
Leveling to SWMP Station	Strategy to Survey to SWMP Station (from a primary mark) annually. Last done for GI (2013), CI (no SWMP), TC (2017), and SH (2016). Will plan to survey to all SWMP Stations in 2018.	SC, FM, HB

Leveling to Tide Guage Station	Strategy to Survey to SWMP Station (from a primary mark) annually. Last done for GI (no tide guage - use NWLON), CI (2017), TC (2017), and SH (2016). Will plan to survey to all SWMP Stations in 2018.	SC, FM, HB	
Height Modernization or Simultaneous GPS	Attempt to do "York River" Campaign by 2020 with the assistance of the NGS Norfolk Office.	SC, NOAA-NGS	
Development of Habitat Maps (Geo7x)	By 2018 (for GI, CI). By 2019 (For TC, SH).	SC, FM, Intern.	
Data Protocols/Management			
Vegetation	Following NERRS Protocols with Modification for Percent Cover and Spreadsheets Modified from Reference Site Project/NERRS Protocols.	SC	
Wetland Elevation Change	Following NPS Protocols Document and Spreadsheets.	SC	
Groundwater Data	Following CBNERRVA "In House" Protocols for Data Entry, QC.	SC	
GPS Occupations	Following Tri-Office Sea Level Rise Sentinel Site Protocols. Data Stored in Excel Format.	SC	
Sediment Data	Following CBNERRVA Protocols for Data Entry from Sediment Analysis.	SC, FM	
Cesium Data	Following VIMS Protocols for Data Processing/Management. Storing Data in Excel Sheets.	SC, FM, VIMS	
Data Entry and QC	Currently Data entered into Excel Spreadsheet by Monitoring Type	SC	
Access Database Creation	Goal to Have Spreadsheets into Access Database by 2020.	SC	
Data Synthesis			
Reserve Component Vegetation Summaries	Last done in 2011 (for TC and GI Ref Site). Goal is for Summary of Changes every 2 Years.	SC, RM	
York River Vegetation Change	Goal - every 5 to 10 years.	SC, RM	
Individual SET Station Trends	Last one in 2017 (current). Goal is every year.	SC	
Develop Comprehensive SET Metadata	Complete. Update Yearly.	SC	
Water Level and Inundation Trends	Ongoing. Training in Tidal Datum Calculatular and Inundation Tool in 2017. Goal to Develop Tidal Datums and SET Specific Indundation Trends by 2019.	SC, RM	
Creation of Habitat Maps	Ongoing Efforts. Plan to have GI and Catlett Finished in 2018 and TC and SH Finished in 2019.	SC, FM	
CCVATCH Application	Done for Goodwin Islands (Marsh, Scrub-Shrub) in 2014. Goal - Organize CCVATCH Workshop for other Reserve Components by 2020.	SC, CTP	
MARS Synthesis	Done for Goodwin Islands in 2016. Goal - assemble necessary datasets to run MARS for CI, TC, and SH by 2020.	SC, RM	
CBSSC SET Synthesis (CB)	Ongoing Effort. Workshops in 2016 and 2017. Possible Summitt in 2018.	SC, RM	
Hurricane Sandy (East Coast Analysis)	Contributed Data from GI SETS (7) to this effort which should be East Coast SET Response to Impacts of Hurricane Sandy released in 2018.	SC, RM	
Marsh Equilibrium Model	NSC Transfer Grant - Goodwin Test Case (2014). Goal to Run MEM for All Sites by 2019.	SC, RM	
Historical Evolution Study	Ongoing Effort for Goodwin and Catlett Islands. Expect to Produce Manuscript by Fall of 2019.	SC, RM	
Thin Layer Deposition Study	At Goodwin Island. Project Started in 2018 and expected to end in 2020.	SC, FM	
Communication and Outreach			
Presentations to Scientific Community	AERS	2013 (YR SS), 2015 (CCVATCH), 2017 (MARS). Targeting Fall 2018.	SC
	CERF	2013 (NERRS SS), 2015 (GI SS), 2017 (Reference Site). Targeting 2019.	SC
	DE Wetlands Conference	2018 (MARS). Targeting 2020 (Wilmington, DE).	SC
Protocol Development	NOAA Tri Office Document	Document Produced in 2015 (NGS, COOPS, NERRS).	SC
	NERRS Sentinel Site Plan Checklist	Program Plan and Checklist Finished in 2016.	SC
Education	VIMS - Kirwan Ecogeomorphology Class	Assisted Class in Project in 2016 - Ecosystem Funcation by Marsh Age (conducted at GI Reserve).	SC, FM
	Tote Workshop	TOTE Workshop 2016. Presentation - Understanding Coastal Habitat Vulnerability to Sea Level Rise Impacts to Inform Resource Management. TOTE Workshop 2017 (demonstrate marsh monitoring efforts). Field trip to GI REF Sentinel Transect.	SC, FM, EC
	Discovery Lab	2014 Discovery Lab - Wtlands	SC, EC
Communicaiton Products	NERRS One Pager	Developed in 2012.	SC, RM
	York River Symposium	Multiple Presntations on NERRS Sentinel Site efforts including talks about CB Sentinel Site Cooperative, Wetland Vulnerability on York River, NERRS Sentinel Site Program, Assessing Changes in Seagreass Dominance, and Dendrological Assessment of Loblolly Pine Along Salintiy Gradient of York River.	SC, RM, CTP

SC - Scott Lerberg
FM - Alex Demeo
RM - William G. Reay
NOAA Intern - Varies
EM - Eduardo Miles
HB - Hank Brooks
RC - Ken Moore
WQ - Joy Baber and Alynda Miller
CTP - Sandra Erdle
EC - Sarah Nuss
NOAA NGS - National Geodetic Survey
VIMS - Virginia Institute of Marine Science